



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/085,619	03/01/2002	Werner Humbs	401552	2166

23548 7590 10/22/2003  
LEYDIG VOIT & MAYER, LTD  
700 THIRTEENTH ST. NW  
SUITE 300  
WASHINGTON, DC 20005-3960

EXAMINER

CHEVALIER, ALICIA ANN

ART UNIT	PAPER NUMBER
----------	--------------

1772

DATE MAILED: 10/22/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Applicati n No.

10/085,619

Applicant(s)

HUMBS, WERNER

Examin r

Alicia Chevalier

Art Unit

1772

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 11 August 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) 1-10 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 11-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 1.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Election/Restrictions***

1. Applicant's election without traverse of Group II, claims 11-20 in Paper No. 5 is acknowledged.

### ***Claim Objections***

2. Claims 11-20 are objected to for the use of the terminology "first second," "second second," "third second," etc. to designate the different electrode layers. While the use of these terms does not make the claims indefinite it makes them difficult to read. For simplicity and better clarity of the claims, it is recommended that Applicant's find a simpler way to refer to the different electrode layers.

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 11, 12, 14-17, 19 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shi et al. (5,693,962) in view of Forrest et al. (5,707,745).

Shi discloses a full color organic light emitting diode array/matrix arrangement comprising a transparent insulating substrate (reference #100 in the figures and col. 4, lines 1-5),

Art Unit: 1772

a first electrode layer (reference #101 in the figures) covering a surface of the substrate, a separator (reference #103 and #105, #107 and #109 in the figures) defining and separating a plurality of first and second cells on the first electrode layer, first pixels (reference #202 in the figures) in the first cells on the first electrode, second pixels (reference #203 in the figures) spaced from the first cells by the separator on the first electrode and third pixels (reference #204 in the figures) on the first electrode and spaced from the first and second cells by the separator. The first, second and third pixels comprise an electroluminescent medium, which reads on applicant's first, second and third organic material layers, generally consisting of an organic material layer comprising a layer of hole transporting material, a layer of active emitter material capable of emitting a hue, a layer of electron transporting material and an electrode, which reads on applicant's first second, second second, and third second electrode layers, comprising a layer of a low work functional metal cathode (col. 4, lines 40-50, col. 5, lines 1-6 and col. 5, lines 24-28).

The first electrode layer (reference #101 in the figures) is an anode layer comprising indium-tin-oxide (ITO) (col. 4, lines 5-9). The first and second organic material layers comprise a respective light-emitting material producing a respective different color light upon stimulation (col. 5, lines 50-54). The separator (reference #103 and #105, #107 and #109 in the figures) comprises a photo-resist film (reference #105, #107 and #109 in the figures and col. 4, lines 56-58)

Shi discloses all the limitations of the instant claimed invention except that the first pixels further comprise a second organic material layer and a second second electrode layer stacked on the first organic material and first second electrode or the stacking sequence of claim 12.

Forrest discloses a multicolor organic light emitting device (LED) comprising several types of organic electroluminescent media, each for emitting a distinct color. The device has a high definition multicolor display in which the organic media are arranged in a stacked configuration such that any color can be emitted from a common region of the display. The three color organic LED is highly reliable, compact, efficient and requires low drive voltages for utilization in RGB displays. See the summary of the invention.

The device comprises an insulating substrate, a first electrode layer, and an RBG pixel. The RBG pixel comprises a first organic layer, a first second electrode layer, a second organic material layer, a second second electrode layer, a third organic material layer and a third second electrode layer. The organic layers comprise a hole transporting layer, an emission layer and an electron transporting layer. See figure 2A and col. 3, line 66 to col. 4, lines 60. The hole transporting material layers can be an arylamine such as triarylamine (col. 10, lines 37-50).

It would have been obvious to one of ordinary skill in the art at the time of the invention to use the RBG pixel of Forrest as the first, second and third pixels of Shi because the RBE pixel allows for three colors from the same pixel and is highly reliable, compact, efficient and requires low drive voltages for utilization in RGB displays.

5. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shi et al. (5,693,962) in view of Forrest et al. (5,707,745) as applied to claims 11, 12, 14-17, 19 and 20 above, and further in view of Campos (6,278,237).

Shi and Forrest discloses all the limitations of the instant claimed invention except that the first electrode is transparent.

Campos discloses a multicolor organic electroluminescence display device comprising a transparent substrate, an electrode and a pixel of organic material layers (figure 3 and col. 5, line 59 to col. 6, line 23). The electrode on the substrate is transparent indium-tin-oxide (ITO). The electrode is transparent to permit emitted light through the transparent substrate to the viewer (col. 6, lines 3-12).

It would have been obvious to one of ordinary skill in the art at the time of the invention to use transparent ITO as taught by Campos as the ITO electrode of Shi because it would allow light to emitted light through the transparent substrate of Shi (col. 4, lines 1-5) to the viewer.

6. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shi et al. (5,693,962) in view of Forrest et al. (5,707,745) as applied to claims 11, 12, 14-17, 19 and 20 above, and further in view of Chen et al. (6,127,693).

Shi and Forrest discloses all the limitations of the instant claimed invention except that the first and second second electrode layers comprise the claimed materials. However Forrest does disclose that the first and second second electrode layers may comprise Mg/Ag.

Chen discloses an organic light emitting diode comprising a transparent anode electrode, a light emitting PPV copolymer, hole transport layer and/or electron transport layer, and a metal cathode electrode (figure 6). The cathode electrode is made of material such as Mg/Al, Ca/Ag or Ca/Al (col. 3, lines 58-60).

It would have been obvious to one of ordinary skill in the art at the time of the invention to use Ca/Ag or Ca/Al as the first and second second electrode layers material of Forrest because Chen discloses that Mg/Al, Ca/Ag or Ca/Al are equivalent materials in the art for electrodes on organic material for organic light emitting diodes.

Art Unit: 1772

***Conclusion***

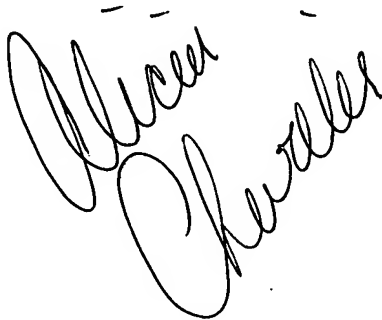
7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alicia Chevalier whose telephone number is (703) 305-1139. The Examiner can normally be reached on Monday through Thursday from 8:00 a.m. to 5:00 p.m. The Examiner can also be reached on alternate Fridays

If attempts to reach the Examiner are unsuccessful, the Examiner's supervisor, Harold Pyon can be reached by dialing (703) 308-4251. The fax phone number for the organization official non-final papers is (703) 872-9306. The fax number for after final papers is (703) 872-9311.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose phone number is (703) 308-0661.

ac

10/9/03

A handwritten signature in cursive script, reading "Alicia Chevalier". The signature is written in black ink and is positioned to the right of the date "10/9/03".